GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

UNSTARRED QUESTION NO:1115
ANSWERED ON:08.02.2017
Technology Vision-2035
Kambhampati Dr. Hari Babu

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the Ministry has prepared "Technology Vision-2035";

(b) if so, the details including the current status thereof;

(c) whether the targets under Technology Vision-2020 have been achieved; and

(d) if so, the details thereof including progress made under various sectors?

Answer

MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE MINISTRY OF EARTH SCIENCES
(SHRI.Y. S. CHOWDARY)

(a) Yes, Madam. The Technology Information, Forecasting and Assessment Council (TIFAC), an autonomous body of the Department of Science and Technology (DST), has prepared "Technology Vision - 2035".

(b) TIFAC, since its inception in 1988, has been involved in Technology Foresight related activities. A long-term foresight exercise, Technology Vision 2020 was pioneered by TIFAC in mid 1990's under the leadership of Late Dr. A.P.J. Abdul Kalam, the then Chairman of TIFAC, with an objective to provide directions for Science and Technology (S&T) initiatives to make India a developed country by 2020.

The changes in global scenarios, economic growth of the country, disruptions induced by technologies and rising aspirations of the countrymen, prompted TIFAC to conduct yet another nationwide foresight exercise. Thus, to identify challenges that would confront the country and explore new possibilities, a second nationwide "visioning" exercise, Technology Vision 2035, was taken up.

Technology Vision-2035 (TV-2035) document begins with the analysis of the forecast made in 1996 for the 16 sectors chosen at that time vis-Ã -vis their progress at the beginning of the TV-2035 exercise (2011-12). The Vision foresees the aspirations of Indians in 2035, and has articulated them as 12 prerogatives which every citizen must be assured of. It identifies technologies at different stages of evolution that can help in guaranteeing these prerogatives. To realize the envisioned scenario, the document puts up 10 grand challenges that our country should confront to make wide-scale impact across the sectors, as we move towards 2035. It further highlights the capabilities and constraints of India, along with the principal actors and key activities which could be taken up to convert the Vision into action. The document concludes by reflecting upon the impact of technology on boosting national power in a comprehensive manner.

Towards realising the vision of the TV-2035 document, technology roadmaps of 12 sectors are being drawn up, in parallel. The roadmap for each sector would provide future technology trends, demand projections, Research and Development (R&D) directives, pointers for research, anticipated challenges and policy imperatives etc. So far, technology roadmaps for five sectors viz., Materials, Manufacturing, Information & Communication Technologies, Medical Sciences & Health care and Transportation have been released and other roadmaps are under preparation.

(c) Yes, Madam. The primary aim of Technology Vision 2020 (TV 2020) was to provide directions for national initiatives in science and technology to make India a developed country by 2020. TV 2020 documents sensitised many ministries, departments and institutions to prepare their long-term perspective plan.

(d) TIFAC in the broader sense carried out assessment of TV 2020 and its achievements based on the data and information available in the public domain. This exercise was done broadly for sixteen sectors viz., food and agriculture, agro food processing, life sciences and biotechnology, health care, electronics and communications, telecommunications, road transportation, waterways, civil aviation, engineering industries, materials and processing, chemical process industries, strategic industries, electric power and advanced sensors and services.

Following are some of the broad observations based on the assessment:

â€¢ Telephone subscriber base in India has expanded by about 78 times in a mere 16 years, leading to a tele-density of 1.5 per cent in 1996 to 79.28 per cent in 2012.
â€¢ India not only latched on to the global ICT revolution, but also became the leading software giant in the world, thereby becoming

the very central part of this global transformation.
â€¢ India is today one of the leading countries in space technologies. It has a well-developed space research programme and the recent ISRO Moon and Mars missions are a pertinent indicator of India's progress in this regard.
â€¢ Though the percentage of contribution of agriculture to overall GDP has fallen from 30% in 1990-91 to 15 % 2011-12, with better technologies and widespread dissemination of proven technologies India has largely achieved the food targets as envisioned in TV 2020.
â€¢ India has done exceedingly well in roadways. In mere 16 years, Indian road network has tremendously expanded with total length of 46.90 lakh km in 2011-12. Most significantly, about 3,70,000 km village roads have been developed for market connectivity.
â€¢ TV 2020 had suggested technologies like long-range communication using satellites, global positioning system, fleet management through combination of satellite communication, radio beacons and meteorological sensors for better navigation. All these technologies are now in use for better communication.
â€¢ India has made reasonable advances in habitat development, given the ever-increasing demands of not just a rising population but a population that is fast moving into urban areas, infrastructure development has remained just behind the demand curve.
â€¢ The per capita per year consumption of Energy in India is still one of the lowest in the world. India is still hydro-carbon dependent and alternative renewable energy sources are not used on a large scale.
â€¢ One of the areas that India could not make a dent is healthcare sector. In 2010, out of 193 nations, India ranked 143 in infant mortality rate, 124 in maternal mortality rate, 13 in life expectancy at birth and 145 in under-five mortality rates. The health infrastructure in India is inadequate compared to global standards.

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